

NURSING INSTITUTE, JHENAIDAH
REPUBLIC OF BANGLADESH

LECTURE 06

FUNDAMENTALS OF NURSING

DIPLOMA IN NURSING SCIENCE AND MIDWIFERY

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SPECIMEN COLLECTION

Question:

◆ **Define Specimen.**

Definition of Specimen:

A specimen is a small quantity of a substance which is collected for investigation purposes and this sample shows the kind and quality of the whole substances.

Question:

◆ **Define Specimen Collection.**

Definition of Specimen Collection:

Specimen collection is the collection of a required amount of tissue or fluid for laboratory examination is called specimen collection.

Question:

◆ **What are the purposes of specimen collection?**

Purpose/ Importance of Specimen Collection:

1. To collect a specimen of body discharges or excreta for examination.
2. To aid the doctor in diagnosing and treating the disease.
3. To detect any abnormalities.
4. To identify the disease and nature of disease.
5. To determine the cause for treatment.
6. To note the progress of disease.

Question:

- ◆ How many types of specimen?

Types of Specimen:

There are mainly two types of specimen:

1. Routine examination:

- ❖ Urine for R/M/E.
- ❖ Stool for R/M/E.
- ❖ Blood for TC, DC, ESR, Hb%.

2. Special examination:

- ❖ Excretion/Body secretion:

- Urine.
- Stool.
- Blood.
- Sputum.

- Wound discharge.
- Vaginal swab.
- Throat swab.
- Nasal swab.

- ❖ Aspiration.

- ❖ Cerebral spinal fluid. (Peritoneal fluid)

- ❖ Biopsy. (Segment of the body tissue)

Question:

- ◆ **Explain the rules of Specimen Collection.**

Rules of Specimen Collection:

1. The specimen must be collected from right person.
2. Kinds of specimen should be collected as by doctor's order.
3. Adequate amount should be collected according to nature of test.
4. The container must be sterile for collection of any specimen and free from outside contaminated.
5. Use special container for some specimen such as fasting blood sugar, random blood sugar, blood for electrolytes etc.
6. Correctly fill a label and attach it to the container.
 - Name and age of patient.
 - Registration number.
 - Bed no.
 - Ward no.
 - Unit no.
 - Date of time.
 - The nature of test.

Question:

- ◆ **Explain the rules of Specimen Collection.**

Time of specimen collection:

- I. Usually early in the morning. (Stool, Urine)
- II. Before washing of mouth- Oral swab, throat swab.

III. Specific instruction-fasting blood sugar collects early in the morning during fasting period.

Questions:

- ◆ **What is blood?**
- ◆ **Define blood.**

Definition of Blood :

Blood is a specialised fluid connective tissue. It is composed of cells, Which are called formed elements and the liquid portion known as plasma.

Question:

- ◆ **Write down the function of Blood.**

Function of Blood:

Blood has three main functions:

1. Transport/ Distribution.
2. Protection
3. Regulation.

Question:

- ◆ **Write down the common sites of blood collection.**

Common sites of Blood collection:

A. Inner Arm:

- Median cubital vein of forearm
- Cephalic vein
- Basilic vein
- Radial vein.

B. Dorsal surface of hand:

- Superficial dorsal vein.
- Dorsal venous arch.
- Basilic vein.
- Cephalic vein.

C. Dorsal surface of foot:

- Dorsal arch
- Dorsal Plexus.
- Great saphenous vein.

Question:

◆ What is Properties of Blood?

Colour: Red (due to haemoglobin).

1. Volume : Average volume of blood in normal adult is 5 L
2. pH : 7.4
3. Specific gravity: of total blood is 1.052 to 1.061
4. Viscosity: Blood is 5 times more viscous than water.

Questions:

- ◆ Explain the Procedure of blood specimen collection.
- ◆ How will you collect of blood specimen for laboratory examination?

Procedure of blood specimen collection for Routine examination:

A. Materials:

- Tourniquet.
- Small mackintosh.
- Syringes: 3ml 5ml, 10ml.
- No. 20 Gauge needles
- Alcohol swabs.
- Disposable gloves.
- Specimen container- test tube or bottle.
- Laboratory requisition form.
- Sterile gauze pads (2"x2")
- Adhesive tap.

B. Procedure:

- i) Check the physician's order, progress, notes, and nursing care plan.
- ii) Identify the patient.
- iii) Explain the procedure to the patient.
- iv) Collect and prepare equipment.
- v) Ensure patient's Privacy.
- vi) Wash and dry hands.
- vii) Put on clean, disposable gloves.

- viii) To avoid hemolysis, the needle used for venepuncture should have a short bevel, the syringe and needle must be dry, and the container into which the specimen is placed must be dry.
- ix) For some tests whole, clotted blood is required, whilst for others it should be anti-coagulated, so that the laboratory may obtain the fraction of the blood for examination that they require.
- x) Each laboratory should issue specimen bottles containing the correct anti coagulant for each test, with instructions to the quantity of blood required.
- xi) Heparin, potassium oxalate and sodium citrate are fairly common anticoagulants
- xii) For blood sugar estimation fluoride is added to the tube to prevent the disappearance of the sugar from the blood.
- xiii) Once the blood has been added to the anti-coagulant, it must be inverted gently so that it is thoroughly mixed with the specimen.
- xiv) When sending blood for examination, care must be taken to avoid haemolysis of the specimen, for haemolysis renders the specimen useless.
- xv) Shaking causes haemolysis.
- xvi) Document the procedure appropriately.

URINE COLLECTION:

Question:

- ◆ Define urine.

Definition of Urine:

Urine is a liquid waste produced by kidneys. Urine is a clear, transparent fluid that normally has an amber colour. The average amount of urine excreted in 24 hours is between 5 to 8 cups or 40 and 60 ounces.

Question:

- ◆ Write down physical characteristics of normal urine:

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Physical Characteristics of Normal Urine

Appearance	Straw or Yellow Amber
Smell	Paint Aromatic
Volume	800 - 2500ml
Specific Gravity	1.015 – 1.030
Osmolality	800 – 120 mosm/L
PH	4.5 – 8.0 (average 6.0)

Question:

- ◆ **Explain the procedure of urine specimen collection for routine examination.**

Procedure of Urine Collection for Routine Examination:

A. Equipment:

- a. Clean, wide mouthed container.
- b. Laboratory requisition form.
- c. Bed pan or urinal.
- d. Soap and water.
- e. Appropriate laboratory form.
- f. Gloves.

B. Procedure:

- a. Check physician order and nursing care plan.
- b. Identify the patient.
- c. Explain procedure to the patient with specific instructions about washing the genital area (skin around the urethra meatus) with soap and water and give the labelled container. Instruct patient not wet the level on the out side.
- d. Ask the patient to direct the first and last part of the urine stream into a urinal or toilet and to collect the middle part of the stream into the special container.
- e. Have the patient place the specimen container in proper/designated place.
- f. With gloved hand place the specimen container in polythene bag.
- g. Send specimen to the laboratory with completed, signed laboratory form.
- h. Remove gloves and wash hands.
- i. Record the procedure in the nurse's notes and other appropriate forms.

STOOL COLLECTION.

Question:

- ◆ Explain the procedure of stool specimen collection for routine examination.

Procedure of urine collecting for routine examination:

A. Articles:

- ❖ A clean specimen container.
- ❖ A spatula for putting the specimen into the container.
- ❖ Dry bed pan (for helpless patients) . Additional bed pan for rinsing and cleaning.
- ❖ Laboratory requisition form.
- ❖ Clean gloves.
- ❖ Waste paper (for wrapping used spatula).
- ❖ A pitcher of water (for helpless patient).
- ❖ Tissue / towel.

B. Procedure:

- ❖ Check the physicians order.
- ❖ Identify the patient.
- ❖ Explain to patient the procedure and make clear what is expected of him/ her.
- ❖ Give the labelled container and spatula to the patient with instruction.
- ❖ To defecate into clean bedpan.
- ❖ Not to contaminate specimen with urine.
- ❖ Don gloves
- ❖ For helpless patient: assist patient on to the clean bedpan.
- ❖ Leave him with instructions.

- ❖ When done, remove and keep aside the bedpan after placing the second one for cleansing.
- ❖ Once the specimen is collected sent it to lab with the appropriate requisition forms.
- ❖ Wash and replace the reusable articles.
- ❖ Dispose of the used spatula wrapped in waste paper.
- ❖ Wash and dry hands.
- ❖ Record information in the patient's chart.



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